

REMARKS

Claims 1, 2, and 7–10 are pending in this application. By this Amendment, claims 1 and 2 are amended to incorporate the subject matter of claim 6, and claim 6 is canceled. The specification is amended to correct typographical errors. No new matter is added.

In view of the foregoing amendments and the following remarks, reconsideration and allowance of the claims are respectfully requested.

I. Claim Objections

The Office Action objects to claims 1 and 2 for various informalities. Claims 1 and 2 are amended according to the Examiner's helpful suggestions. Accordingly, reconsideration and withdrawal of the objections are respectfully requested.

II. Rejections Under 35 U.S.C. §103

The Office Action rejects claims 1, 2, 6, and 8–10 under 35 U.S.C. §103(a) as being unpatentable over Takei; and rejects claim 7 under 35 U.S.C. §103(a) as being unpatentable over Takei in view of Rutter. Applicants respectfully traverse the rejections.

Claim 1 and 2 each require "a polymer having a weight average molecular weight of 5,000 to 20,000 and containing components having a molecular weight of 3,000 or less in a rate of 20% or less." The Office Action asserts on page 5 that Synthetic Example 2 of Takei discloses a polymer having a weight average molecular weight of 19,000, and that polymers with weight average molecular weights close to this value would satisfy the limitation of "containing components having a molecular weight of 3,000 or less in a rate of 20% or less." Applicants respectfully disagree.

First, Synthetic Example 2 does not disclose a polymer having a weight-average molecular weight of 19,000. Instead, Synthetic Example 2 discloses a polymer having a weight-average molecular weight of 5,300 (see paragraph [0119]). Synthetic Example 3

discloses a polymer having a weight-average molecular weight of 19,000 (see paragraph [0123].)

Second, irrespective of a disclosed weight-average molecular weight of 5,300 or 19,000, the Office Action's assertion that polymers with weight average molecular weights close to this value would satisfy the limitation of "containing components having a molecular weight of 3,000 or less in a rate of 20% or less" is devoid of any supporting documentary evidence and of any technical reasoning that would reasonably support this veiled assertion of inherency. Precedential U.S. case law states:

In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.

Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original).

From a mathematical standpoint, there are an infinite number of solutions where polymers having a molecular weight of 3,000 or less can account for more than 20% of the total weight of a polymer having a weight-average molecular weight of 19,000. For the sake of simplicity, consider a composition made up of two different polymer weights. 30% of the total weight is attributable to polymers having a molecular weight of 3,000. The other 70% is attributable to polymers having a molecular weight of 25,857.14. Thus, the weight-average molecular weight would be calculated as follows:

$$\text{weight-average molecular weight} = (3,000)(30\%) + (25,857.14)(70\%) = 19,000$$

Accordingly, a polymer having a weight-average molecular weight of 19,000 is not necessarily precluded from more than 20% of its polymers having a molecular weight of 3,000 or less that account for more than 20% of the total weight of a polymer. Indeed, the weight-average molecular weight of a polymer gives absolutely no information as to the weight fraction of any group of species comprising the polymer composition.

Therefore, neither Synthetic Examples 2 nor 3 of Takei explicitly or inherently discloses, or otherwise suggests, "a polymer having a weight average molecular weight of 5,000 to 20,000 and containing components having a molecular weight of 3,000 or less in a rate of 20% or less."

Furthermore, nowhere does Takei suggest the desirability of minimizing the percentage of smaller polymer species, or recognize the problem addressed by Applicants' claimed gap material. As discussed in Applicants' specification, one of the problems the inventors was addressing was the diffusion of low molecular weight substances into the overlaid photoresist or anti-reflective coating upon coating or heat-drying. *See* paragraphs [0010], [0011], and [0013]. The inventors were able to minimize the diffusion/sublimation of low molecular weight polymer molecules by the specific selection of polymers and solvents, and limiting the amount of low molecular weight polymer molecules present in the composition. *See* paragraphs [0010], [0011], and [0020]. Takei fails to teach or otherwise suggest that the specific selection of the Applicants' claimed polymers and solvents, and limiting the amount of low molecular weight polymer molecules present in the composition, would minimize the diffusion/sublimation of low molecular weight polymer molecules into an overlaid photoresist or anti-reflective coating.

The Patent Office merely applies Rutter as allegedly disclosing the additional features recited in dependent claim 7. Thus, Rutter does not cure the deficiencies of Takei with respect to claims 1 and 2. More specifically, Rutter is directed to compositions and methods for protecting apertures in the manufacture of electronic devices (see Rutter, Abstract).

Based on the above, Takei, alone or in combination with Rutter, would not have rendered obvious claims 1 and 2. The remaining claims variously depend from claim 1 and, likewise, would not have been rendered obvious by Takei and/or Rutter for at least the

reasons set forth above with respect to claim 1, as well as for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the claims are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,


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